ABSTRACT

Proposed a method of wireless data exchange amongst ad-hoc mobile devices of limited range within a communications network, the network comprising a plurality of mobile units

5   including a source mobile unit and a destination mobile unit and a plurality of wireless communication links wirelessly connecting together, the said method comprising

-a special communicative protocol supporting a plurality of tasks in connection with ad-hoc network abilities (CYRF

10   protocol),

- a special communicative protocol supporting a plurality of tasks on global communications (GLOBAL MESSAGE TRANSPORT),

- a special fail-safe file system for data storage.

The said CYRF communicative protocol further comprising

15   -   a routing method for providing data exchange among devices in network,

-    a frequency division multiple access method,

-    RF output power control method.

A routing method for supporting ad-hoc mobile communications

20   within a radio communications network. The network comprises a plurality of peer mobile radio communication units including a source mobile unit and a destination mobile unit, and a plurality of radio communications mobile units as intermediate links connected wirelessly together with the said source and

25   destination mobile units. The method comprises determining the best route with the best quality of signal transmission on the base of competitive signal broadcasting to the plurality of mobile items, with the further broadcasting (retransmitting) to the next plurality of mobile items until the destination mobile

30   item being reached. The first signal to reach the destination is accepted to have the best transmission quality along the route. Use of the competitive broadcasting enables the routing method to deal efficiently with mobile unit migrations throughout the network.

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Proposed Frequency Division Multiple Access method allows the maximal use of assigned channel band for increasing total data exchange speed, decreasing the idle time by means of dividing of all or a part of assigned band into two or more frequency

5   channels with the further assigning them different functions in the data exchange process.

The method lies in assigning each frequency channel the different types of jobs to be processed at.

The method lies in assigning for at least one of frequency

10   channels functions of processing and exchange of accountant data - "base" channel). Other channels are assigned for different types of job to process, for each one type of job is assigned to one or more operative channels.

The account data list contains at least the device's ID plus

15   channel number to sent messages for it.

A output power control method in RF communication systems is either proposed. Every device the receives a data block from other device checks its RSSI level and if the level is lower than a threshold, the remote device is signed as 'faraway'.

20   Then all data blocks to be sent directly to that device should have higher level of transmitting power indicating it in the frame header. If a frame from 'faraway' device is received with high level of RSSI, the device is signed a 'normal'. An RSSI measured value should be corrected in accordance with

25   indication of extra power in a frame header.

Global Message Transport method aims to expand the coverage area for remote information transmission and reception for networking clients equipped with a mobile device combined with a limited-range radio transceiver. The method increases the

30   data communication efficiency between subscribers, including possibility of world-wide message exchange.

The method of increasing fault tolerance of a file system for carriers with a limited recording operation resource consists in dividing carrier volume into identical format and size data

35   blocks.

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